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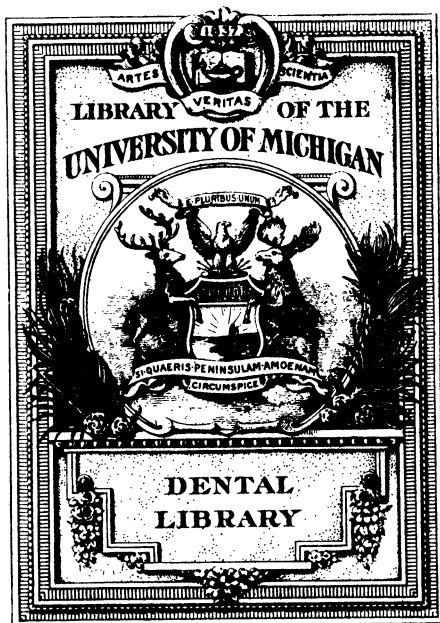
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JULY 4th

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The AMERICAN DENTAL JOURNAL

Edited By
BERNARD J. CIGRAND, M. S., D. D. S.

DECLARATION:

*Devoted to advancing the art and science of dentistry;
Arousing a deeper conception of our duty to the public;
Instilling a broader and more liberal professional spirit;
Aiding in elevating the plane of dental organizations;
Supporting state boards in executing dental laws;
Lending assistance to worthy and ethical practitioners;
Instituting library and college extension courses;
Pointing the way to entertainment, recreation and rest;
Instructing in the science of proper practice building;
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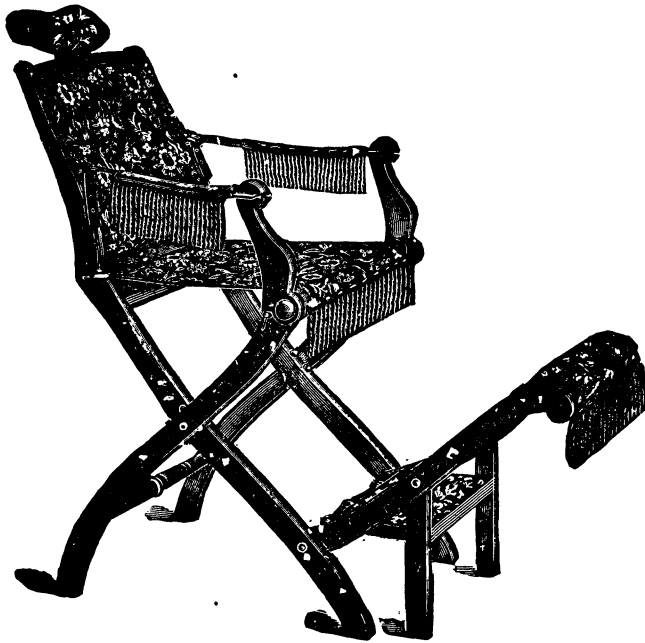
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The AMERICAN DENTAL JOURNAL

DR. BERNARD J. CIGRAND, Editor

Published on the fourth of every month by The
Ross Dental Manufacturing Company.

Editorials and Comments

"The editor assumed charge of this journal with the signed understanding that he shall have absolute and unlimited control and supervision of the editorial and literary elements; this unusual grant makes it possible to render the profession an independent peri-

odical; the title page clearly indicates the scope under the new policy of this old established journal."—*Publishers.*

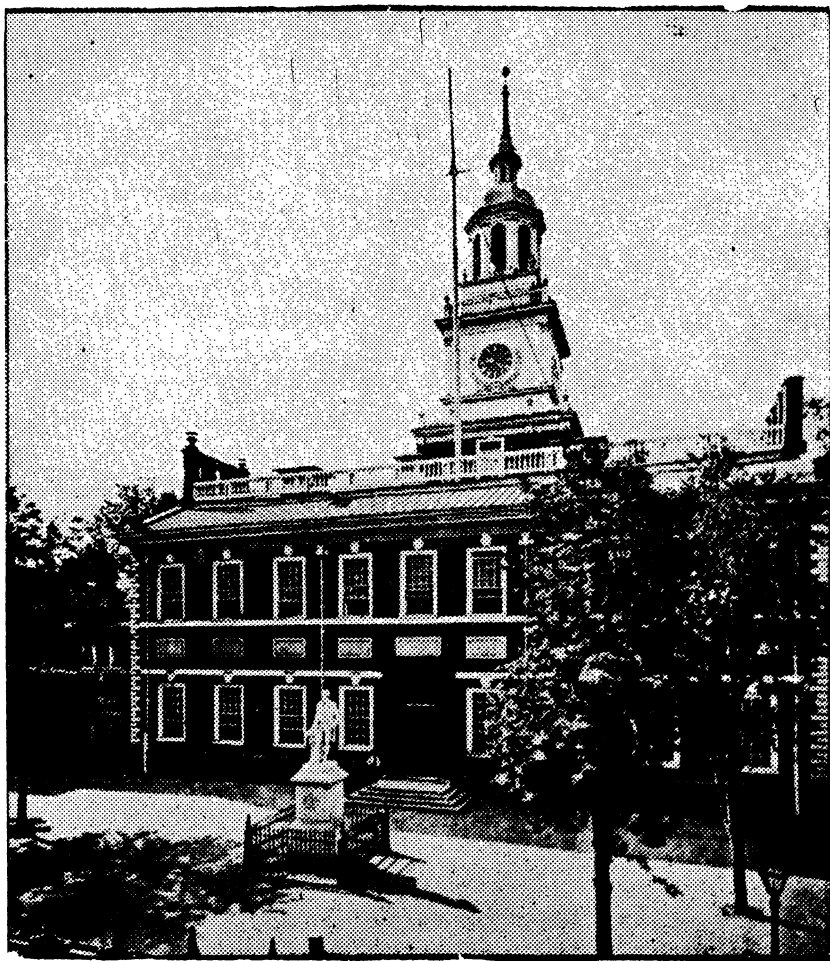
ARE WE UP TO STANDARD WITH OTHER PROFESSIONS IN THE MATTER OF COMPENSATION?

This is an age of centralization; the trend of the times is toward combining of forces and uniting of energies of a similar character. At no period of civilization has there been expressed so pronounced a purpose of affiliation. Institutions of industry and commerce have recognized the good results growing out of mutual concern. The individuals too discern the benefits of such organizations and hence union of purpose and concert of effort is everywhere apparent.—If we impress the advertiser of the good results the possibility of a cheap and advertising man to be among us will be less likely. So arrange the affairs that the advertiser quickly realizes that if he seeks a good remuneration he will find it best, wisest and safest to uphold the prices. One should feel compassionate for the dentist who resorts to advertising, first because no man will fall to that depth of professionalism unless he is driven because of a lack of means to make an honest, ethical living. Second, he does not possess that intuitive element of getting the price his services are worth. He labors along, toils with-

out vacation, struggles for the price of existence, then in the final effort of his life succumbs to the beggarly thought that "self preservation is the first law of nature," and then pin up his low prices.

The dental profession in the last twenty years has devoted considerable attention to organizations, associations, societies, clubs and fraternities, calculated to advance the purely scientific side of dentistry. Today let us presume that we are a unit as to the etiology of dental caries, that we fully comprehend the causation of pyorrhea; that our knowledge is complete concerning root canal dressings and that the underlying principles of crown work is fully known. Hence, let us dispel from our minds all such subject matter as pertains to the technic and practice of dentistry and consume the moments, upon a theme fully meriting our closest and most earnest attention. This editorial hopes to express in an emphatic manner the necessity of closer and more fraternalism on the interesting subject of professional remunerations. If I were to choose a text from which to draw inspiration I could choose none more applicable to the subject and in concert with my mind and purpose than the liberalism voiced by Lincoln, "With malice toward none and charity for all." If there are those who by nature love to advertise their goods and price in open market I would suggest that you permit him to enjoy this form of vanity but induce him to have the price high enough so that his neighbor practitioner need not blush at the sight of the morning newspaper. We all will grant that he is entitled to liberal consideration, since the general public accepts him as a member of our profession. Unfortunately the laity has not yet been fully educated to that realm where the price advertiser is understood. They still class him with his calling, little suspecting that that calling has many layers or strata. Hence, the difficulty of training the public. Let us rather give our efforts to inducing respectability in the price advertiser; it will be simpler to convert the erring dentist than to enlighten the general public. It is possible that the institution from which the graduate hails is indirectly responsible for the low or meager charges he makes for his services. Colleges at the present, as in the past, teach the technic theory and principles of the art and science of dentistry, but fail to educate the student on that very important subject of dental fees.

The student likely, after leaving the college, thinks that all he



INDEPENDENCE HALL, PHILADELPHIA,

Where the colonies were united on July 4, 1776.

Where is the birthplace of dental co-ordination?

The dental war, and disunion is still on. The non-ethical and the ethical are still at swords points.

needs to charge is a slight advance above infirmary prices, and in this thought he blunders along stunting his own financial growth and inducing a variety of abuses and injuries to his fellow practitioners. Quite often too the element of previous occupation or servitude controls his judgment as to the fees he requires, his employment may have exacted long hours with little pay, and hence he is mentally unprepared to demand the fee which his new life and career indicates.

The colleges might, with wisdom and propriety, have their candidates for graduation sign a contract or agreement—an Aesculapian oath, if you please—in which the candidate for the degree of Doctor of Dental Surgery affirmed on his honor that he would not degrade his Alma Mater and profession by price advertising. But after all, experience as a dental teacher, covering a period of eighteen years, has taught me that such high ideals are likely to be early shattered. There are teachers who read *THE AMERICAN DENTAL JOURNAL* who will cheerfully corroborate the statement that there are students of good moral tendencies who would sign such a statement, yet after a few years of practice in contact with the tempting environment of city life, forget not alone the good council of his dental instructors but even the basic principle of morality taught at his mother's knee.

At a time when we wish to harmonize and fraternalize the practitioners of dentistry let us not forget the truth in the old English verse:

“There is so much bad in the best of us
And so much good in the worst of us,
That it scarcely behooves the most of us
To talk about the rest of us.”

It has been a difficult task to determine the remunerations in our profession. We have not made compensations a part of our literature and hence many of these facts must be gotten through correspondence and by conversations. During the past years, while attending dental gatherings in various states, I made it a point to inquire into the general financial status of our profession. In rotundas of hotels and ante rooms of sessions I learned of facts and conditions not to be gathered from our periodicals and books. Many of these deductions will be surprising, I well know, but I shall give them in the hope that it may stimulate a census or inquiry of a more national character.

Regardless of the aim of raising the remunerations of our practitioners, statistics of a varied kind would be profitable in the curriculum of our science.

In gathering the various opinions, I sought to learn of the grievances of the delegates and members, and it was a general and emphatic complaint that our fees were too meager, that in operations which demanded skilled and conscientious attention, as the administration of an anæsthetic, where the practitioner practically took life within his charge, the fee was so insignificant that I will not dignify the price paid by pronouncing it a fee, compensation, or remuneration, but stamp the charge by the commercial word price, which has within its definition the unstable meaning of a fluctuating bargain counter symbol.

Could you dream of the lawyer, oculist, surgeon or physician assuming the responsibility of human life at the paltry sum that it would require four cases to net one dollar? Such a disposition on the part of dental practitioners holds our calling on the low level of a trade.

Then we have the subject of root canal fillings, those distressing, torturous canals where you waste life force, exhaust your neural energy and bring to your entire being, mental and physical, a tedium not yet clearly described in our dental vocabulary. I sometimes think this operation oft brings a peculiar tired feeling not yet properly named.

This trying and exacting and painstaking dental operation, for the most part, does not receive the dignity of meriting any charge. Some few operators are disposed to remove the pulp to the apex and dress the canal for a figure varying between one and five dollars, believing they have charged an exorbitant fee; the fact is this operation is universally performed at entirely too low a cost figure.

The treatment of abscesses and antrum disturbances, cleft of palate obturators, difficult cases of mal-occlusion and complex cases of dentures, warrant a fee according to the obstacles encountered, including the disposition of the patron. And not infrequently the patient fully acquainted with your task would be willing to pay any multiple of our currency, but we fail to place the proper appreciation upon ourselves and present a bill depreciating not only the fee but the patients respect for dentistry.

It not infrequently happens that a dentist extracts a tooth, possibly injuring the alveolar process, incidentally fracturing the septum or leaving an alveolate within the wound. Subsequent irritation, inducing the call of the physician, who in turn takes patient to hospital and the patient, under the influence of chloroform, merges from artificial dreams, observing surgeons in long white robes meandering about the operating cart.

The case heals quickly, the family physician is lauded, the dentist abused, and promptly a check of \$25 or \$50 sent to the careful operator. The dentist knows nothing of this transaction, he is not consulted, he dispels the simple extraction as a success; had he been consulted he would, with his light tweezers, eliminated the spicula, likely adding no charge for the post extraction service.

The question of tenure of service may not appeal to you as being of any importance in registering our equity in the matter of remuneration, but careful study will convince you that the duration of dental service is considerably shorter than the other professions. In short, we are not able to practice at such an age as the physician and lawyer, we have as our harvest time a period of about fifty years, granting that the dental student at the age of twenty-one receives his degree at the age of seventy-one he will have attained to that milestone of life where he can no longer hope to merit the confidence of the clients. Your age will have incapacitated you for the finer technic, your eye sight likely sustained injuries from the strain of your specialty, while the constant caution has provoked a variety of nervous disturbances and the peculiar pose of the dentist at the chair yielding little exercise, inaugurating some disorders, hence the years for actual practice are placed at a high figure at seventy-one. Dr. C. Edmund Kells, of New Orleans, wrote: "The years of advantageous practice of a dentist are comparatively few with the lawyers and physicians each succeeding year, but adds to his experience and usefulness; but with the dentist it is quite different, for at the age when either of the others would be in the prime of his profession the dentist is on the decline."

This we all accept as the plain truth, hence dentists must be better paid since in his years of decline and retirement he will require the means earned while in the days of vigor. The dentist, as a usual occurrence, leaves the chair and bench only to wait, for years, the

sound of Gabriel's horn. Quite different with the physician and lawyer, who practice their professions way into the dim light of night. Thousands of them are receiving the highest fees of their lives, when past the milestone of seventy-one. They continue earning splendid salaries until, as the poet says: "When aged and feeble they saunter into the silent halls of death."

The danger side of the dental life further prompts us to the realization that we should, according to the vernacular, remark: "Make hay when the sun shines."

If statistics, furnished by large insurance companies, can be relied on the number of dentists who die young and suffer from acquired consumption is considerably in excess of any of the other liberal callings.

The verdict is that two causes induce the high mortality rate: First, position at the chair and confinement in small offices; second, likelihood of contraction from consumptive patients. The percentage of dentists who succumb to tuberculosis is placed at 11 per cent, while lawyers show as low as 8 per cent and physicians barely 7 per cent. Physicians suffer least from nervous ailments, while lawyers register higher and dentists the maximum. These figures go to demonstrate that our vocation demands fewer hours, longer vacations, better salaries to lengthen life as compared with the sister callings. I have for fourteen years inaugurated my vacation of four weeks August 1st; my patrons know this date. Besides I have so arranged my practice that certain definite hours of the week I dismiss dentistry from my mind and occupy the time in affairs as positively opposite to dental science as can be found. In this pronounced change you can get rest, and rest is but another term for rejuvenation, and this in turn means vigor, and without vigor you can not accomplish good results in dentistry and naturally can not demand a corresponding good remuneration. The element of health enters into the equation of salary and fees in a most emphatic manner. The most dreadful calamity that can befall one of our profession is to allow his practice to make a slave of him, to toil and labor without recreation, to so highly esteem the pleasure of operating for your patients as to deny yourself the one necessary breathing spells and opportunities for neural re-enforcements. A most troublesome point is the method of arriving at the judgment of the fee. Many dentists charge by the clock system,

others by the service rendered system, and my inclination leads to the belief that the operation, when complete, should merit such price as is in accord with the material used, energy employed, disposition of patient and general standing of patron, regardless of what the clock was doing in the meantime. The clock system has so many objectionable features that I have long since taken the clock from the eyes of my patient; when you follow the clock, you feel so completely at the mercy of your patient that it annoys you to answer the phone, distresses you to welcome a newcomer, and grieves you to shake the hand of a friend; every moment of the specified time belongs to your patient, you are the serf when you leave the chair to attend to these interruptions; you must stop the professional clock much as a time keeper at a football game stops his watch to allow for recuperations and injuries. I have discarded the time system; I despise the tread mill; I love to live.

I quite agree with Dr. McKellops, who once told me this about fees: "I never allow a patient to snap a watch at me as an inference to hurry and keep down the price. I am not racing with either sun or moon when I am inserting a gold filling."

It is true, your patients will compare notes and get acquainted with your prices, but we must at some time convince the public of the variety of circumstances which control the charges of any given operation. I contend that scarcely any two operations, even in the same mouth, are precisely similar, hence I have fought the idea that Richmond crowns, dentures, fillings, treatments, or even extractions, should have a standard price. We do not deal in commodities, we do not aim to typify in our reproductions, we are controlled by living organisms, subject to the great and divine law of molecular change and correspondence; hence, our dominion admits of a variety of charges for what appears to be the same operation or construction.

When we attain to this era of our professional progress, we shall have arrived within the portals of a truly dignified calling. This is the realm where we belong and no time is so prolific of results as the present. Why do we delay in our attempt? Does not the mother profession teach this attribute; and does not the kindred profession of law dispense with the old and commercial idea of the clock and the material?

Who can put a just valuation on the restoration of a neglected

and abnormal denture of a millionaire? Should he receive the same bill that some hard toiling servant girl or widowed mother anticipates? My answer is no; give the poor the benefit of every hour of the day at the least possible cost and charge the rich, the affluent, the wealthy, as in the days of Alexander the Great, a fee in keeping with their earthly blessings.

So in our financial discussion let us be calm, generous and charitable. Great good will result from a movement, such as advocated, provided we remember that in bringing about a union of forces we must deal kindly with those elements in our profession though we dislike and even abhor them; the concessions, audiences, and caucuses given to those who now block the way will prove our wisdom and establish a unity of purpose in our profession it will aid in placing our noble calling within the cycle of learned and dignified professions—serving the public and ministering to the suffering and distressed.

If the editorial has prompted any practitioner to foster the idea of such a union of effort I shall be abundantly repaid for the tedious task of that preparation which was made in the interest of the profession.

A convention in which this phase of the progress of our profession would be the only matter under consideration might result in much financial good, and make it possible for practitioners to visit conventions oftener and buy the appliances of advanced science and art.

SPECIAL CONTRIBUTIONS.

TALKS ABOUT BUSINESS BUILDING.

BY A. F. SHELDON.

Formulator of the Science of Business Building and Editor of *The Business Philosopher*.

Talk No. 2.

At the close of our last article, I asked this question: Who are the salesmen in the world of commerce?

My reason for asking this question is the fact that there seems to be quite a general impression among business men that it is those only who directly market product, sell, or take orders for the product of any given commercial institution, who may or should be termed "Salesmen."

If we wish to be technical, and follow dictionary definitions, possibly this is correct, but it is better to be practical than too technical, and the test of practicability is result-getting; in the commercial world—business-building.

The way to get results—profit-making business—is to follow this definition:

The salesmen of the world in the realm of commerce are the commercial institutions themselves.

Whether an individual business, a partnership, or a corporation, there is just one salesman for each commercial institution in existence today—the institution.

It is a composite being. If a partnership or corporation, it is a legal entity.

Everybody from porter up to president is a part of one salesman—the institution.

The result of the efforts of the institution—its work as a whole when successful—is to market its product at a profit.

As we saw in Talk No. 1 the accomplishment of this result is dependent upon the service rendered. This in turn depends upon the efficiency of each unit.

Every human being in an institution must be a success for the institution itself to be a complete success.

Every human being in it must be a service-renderer, and if he is that he is bound to be a business-builder, and by all the rules of commercial logic a union of business-builders can result in one thing only—a profitable business.

HOW ABOUT EQUIPMENT?

If each person engaged in the service of the institution is right, the equipment must and will be right. Equipment is effect; man is cause.

The right cause (man) will provide the right effect (equipment).

A house is known by the customers it gets and keeps. It is the repeater that counts—the pleased buyer, who buys and buys again. He advertises your service by continuing his patronage. Strive to make many like him. He is the most potent factor in commercial success—the pleased patron, who buys and buys again.

Both the getting and the keeping of customers or patrons depends upon the efficiency of each unit in the composite salesman—the institution. Its success is the sum of the successes of the individuals engaged in its service. Make each unit right, and the whole will take care of itself.

E PLURIBUS UNUM, UNITED WE STAND, DIVIDED WE FALL,

was never said more truly of our great country than of every commercial institution in it.

Successful institutions are nothing more than the combined efforts of successful men. The house as a whole must persuade the buying public to purchase its product at a profit.

SALESMANSHIP IS PERSUASION APPLIED TO BUSINESS.

Persuasion works both ways. People are persuaded to buy, people are persuaded not to buy, people are sometimes persuaded by one individual part of the composite salesman to buy and then are persuaded not to keep on buying by some other part of the composite salesman.

This is not done intentionally, of course, as a rule; but it is results that count, and persuasion not to keep on buying—not to become a repeating patron—is the result of the words or deeds of an inefficient unit.

A HOUSE DIVIDED AGAINST ITSELF CAN NOT STAND.

Nineteen hundred years ago this great truth was uttered. It is one of the eternal truths of all time. It is as true now as it was then. It will be as true tomorrow as it is today.

In the business world, united effort spells success. Disunity—division—clash of interest—these constitute the prologue of the drama that ends in the bankruptcy court.

I have known the good work of a good getter of customers—the salesman in the technical sense of that term—to be all undone by the untactful work of the credit man; or, again, by the short answer or smart remark of the repair man.

The inefficient work of a bookkeeper, who should be driving a mule instead of pushing a pen, has driven away many a customer. People do not like to get incorrect bills.

Poorly written letters, incorrect spelling, lack of efficiency of any kind on the part of the stenographer and typist often spoils business.

WHAT MAKES A SUCCESSFUL BUSINESS?

I answer, not only the business obtained, but the business retained. The first is the seed, the second is the tree that bears the fruit of profit.

Business-building consists in keeping the patron once made, and making his good-will a magnet to attract other patrons.

Great commercial institutions are not built by the patrons of the day, but by the patrons of the years, whose children, in time, will become patrons.

An endless chain of patronage is the only hope for the success of a great business house.

It is all very plain when we once wake up to the fact that confidence is really the basis of all trade. It is not only the basis, but the very atmosphere in which it grows.

Every thought you think, every word you speak, every act you perform, adds to the sum of the confidence the buying public has in your institution, or it subtracts in some degree from it.

There is no middle ground. There is one kind of straight sticks only. All sticks are either straight or in some degree crooked.

The words you speak and the deeds you do are either right or

wrong. They either tend to beget and strengthen confidence, or to destroy it.

This is true of every one connected with the composite salesman—the institution.

To get results, to render service, and therefore build business,—in fact, to make a profit of each department of the dental business or of any other business—each department must work in harmony within itself and with all the others.

There is often too much rivalry between departments and too much rivalry between people in departments. Unselfish co-operation constitutes the lubricating oil for the machinery of business. Apply it, to avoid friction. Selfishness is a sand that cuts and wears the machinery out.

In the ball team that wins, each player is willing to make a sacrifice hit, if necessary. It's the team, the team, the team. Anything that's fair to make the team win!

It's the star team spirit in business that wins, not the team of stars.

The workers in an institution are not independent, neither are they dependent. All are interdependent.

Stand so close together that you support one another.

E Pluribus Unum. United We Stand, Divided We Fall. Make that the motto of your institution, as it is the motto of our nation. Then no one can "fall down."

When soldiers would pass over a stream the force of which would hurl one man from his feet, they link arms, form a long file and plunge in. So united, they successfully ford it. What no one man could do a united mass of men can do, and yet the combined effort results in the profit of each individual.

In the world of commerce there are rivers that would prove just as disastrous for one man to try to pass over alone. Don't let him do it. Let him call his companions, and go over with them triumphantly. Their victory will be his victory.

All will win, and yet each man will be an individual victor. Isn't that the noblest kind of victory in which all triumph and no one suffers defeat?

ARE YOU THE "BOSS"?

If you are, I want a word with you. If you are an employe—that is, the right kind of employe—the employe who has determined on becoming a "boss" some day—this is of interest to you, too.

A great business man said to me recently, "I quit thinking about the success of the company, dividends, et cetera, a long time ago, and transferred my thought to make each man and woman connected with my institution a success. As soon as I did that, I found that the success of the institution began to take care of itself."

If the employes in your institution are not successes, then your institution is not a success. Do you feel that way?

WHAT IS THE GREATEST POWER IN BUSINESS?

What is your answer? Think it over well and long. It is important enough to deserve that.

In Talk No. 3, I shall tell you what I think it is.

THE STUDY OF DENTAL HISTORY.

BY H. L. AMBLER, CLEVELAND, OHIO.

The study of history affords the main opportunity for dentists to know of and appreciate the science, evolution and progress of the profession, and will create in them a wish to learn more of collateral branches, and this will lead to fondness for good literature in general, and make them better citizens; because they will have broad ideas, and also make dental graduates equal to graduates in any profession.

The study of history is favorable to producing scientists, because it tells of what has been done, and how it was done, thus stimulating the mind of the hearer and prompting him to emulate some of the noble characters spoken of—it imbues him with enthusiasm, and he will aspire to great things.

If you impress the minds of dental students with dental history, they will have a higher regard for the status and dignity of their calling, and the impressions they will make, and the influence they will have on their fraternal brothers, and also on the laity, will redound to their honor.

History should help guide dentists and stimulate effort along lines of invention and discovery, and those who study history will naturally assist in making it.

It is for the intellectual and material benefit of the dental student to study history; because it makes him intrinsically greater, wiser and better, and teaches him to honor the memory of notable men.

History of the best things tends to do away with quackery and empiricism, ignorance and error, and increases our resources.

Teach history so that the practitioners may know what was done in ancient times, and where dentistry originated, and when, and by whom important discoveries in our specialty were first made, and what dentist discovered practical anæsthesia, or made certain surgical operations, or applied certain mechanical principles, or wrote the first books on our specialty. One can not be progressive without knowing more or less of history, because he might be going backwards in trying to develop some idea or material thing which had become obsolete before he entered the profession.

In order to fully understand the steps which have been taken to bring dentistry up to the present standard, one must study history, which is one of the factors that helps mold dentistry into a profession.

With the dental student who is longing for information every thing that has to do with the history and progress of dentistry is studied with interest, especially the rise, fall and revival of dental art; he must learn of the origin of the science and art, or he can not determine its progress or appreciate its advancement. He should be made to feel that he owes much to those who made dentistry a profession and invented methods and instruments which he will use daily, the products of which are a necessity in every community.

The student should be taught history so that he will understand that he does not know everything and is not in advance of all of his predecessors, but that some of their work has been relegated to him for completion.

You can interest students by occasionally giving short biographical sketches of some of our most noted men.

There is no longer any excuse for not teaching history, as we have a text-book, and also four college years of not less than seven months each, in which time can easily be provided.

None other of the learned professions omits such instructions. What would be thought of a theological school which would plunge its students headlong into the dogmas of its particular sect, without first dealing with the history of religion? Such a school would be very

narrow, indeed, and yet gauged by the same rule, dentistry is more narrow than theology. What would be thought of a law school which did not teach the history, emanation and foundation principles of law? Such a school would probably give a student, by way of introduction, a case to "try."

What would be thought of a medical school which did not tell its pupils about Esculapius, Hippocrates, Galen, Hunter, and others? Such a school might give a freshman a case of typhoid fever to treat.

Schools of painting and sculpture go back to ancient and medieval times for their ideal patterns.

We believe that if every college would provide for a reasonable course of instructions in the history of dentistry, showing how it has gradually evolved a literature vast and comprehensive enough to occupy all the attention of any one mind, that our specialty would be broadened because of the knowledge thus disseminated.

History shows that our profession is on an equality with several other professions, and gentlemen in these professions should treat each other in a noble manner, and in accordance with their scientific attainments.

Students can learn from history that dentistry has a record which they need not be ashamed of, and a literature of its own which is receiving large yearly additions; also that highly educated men of the past and present are engaged in its practice; knowing this will be a great factor in causing pupils to strive with all their powers to be a credit to their calling.

History induces in students respect, veneration and love for their work, and impresses more than ever upon them that it is a profession.

The profession should honor the man, and the man should honor the profession, and this will be more apt to be done if pupils are told about the good things of the past, as well as present. They should be taught history so that the world at large will consider them as well equipped in their profession, as any other man is in his; thus they will gain standing, prestige and influence, which will be of incalculable benefit.

Some of the antagonism which has been shown towards our profession has been directed to lack of proper literary training.

They should be taught history so that they may be able to defend

themselves from the attacks of those who do not appreciate the large amount of study, work and experiment which has been given for the purpose of relieving pain, preserving and restoring organs of the body, and adding to the longevity of the human race.

History helps put a man in his true position for future usefulness, and it is impossible to keep abreast of the times in this inventive and progressive age, without at least knowing our present and passing literature.

"The thoughtful, reasoning reader will find a mine of value in history, and mentally add to his storehouse of information laid aside for the future, and the use which is made of this knowledge will depend upon the individual; one finds pabulum for future essays, another will find hints which lead him to deeper investigation and original productions."

One evidence of progress is the ever increasing interest manifested in historical research and study of collateral branches, and the profession is gradually comprehending that the proper way to learn lessons of wisdom for the uncertain future is to give immediate attention to the events of the past; if we remain ignorant of the history of those who preceded us, we are liable to make many sad mistakes. Another evidence of the fact that history is attracting more attention than formerly, we note that the National Dental Association has appointed a committee of twelve on this subject, and the "Southern Branch" has also a committee. History and ethics should be established in every college so as to develop a nobler strain of professional life.

Other evidence is that several of our colleges already teach more or less of the subject.

"Teach history so that pupils may realize how deep down into the soil of history run the roots of the life that flourishes in the profession. Here great events have happened; here great deeds have been done; here great men have lived and flourished and labored; here the fascinating story of the growth of the profession is told."

History teaches that the dental spirit is one of unrest, full of anxious brain power, continually reaching for something better, coupled with nimble fingers, bright eyes, good judgment and perseverance, and the watchword is, and ever must be, onward toward perfection.

OIL ON TROUBLED WATERS.

BY B. J. CIGRAND, B. S., M. S., D. D. S.

The Iowa State Dental Society, while in session at Des Moines, witnessed what has been pronounced the stormiest dental gatherings on record. It related itself about the Taggart Dental Protective Agreement, and not in the memory of any dentist in the large gathering, was ever such a warm, boiling hot and simmering meeting.

The debate, discussion or word combat lasted four hours, plus, and seven speakers took the floor sixty-eight times, while the auditors applauded until hands were red and swollen like the palms of a base ball catcher.

The following, from *The Dentists' Record* and *The Dental Digest*, shows how at the critical period in the debate, a calm summary of the situation prevented ugly resolutions from becoming a part of dental history; and the convention again resumed an orderly attitude:

"Dr. Roe: We have a man with us today as our guest who I believe is as competent to discuss this matter as any man in the United States. That is strong, but I believe it. It is the editor of THE AMERICAN DENTAL JOURNAL. He has published both sides of this case, and I would like to hear from him—Dr. Cigrand, of Chicago.

"Dr. Cigrand: Mr. President and Members of the Dental Protective Association, Members of the Dental Profession—I did not wish at this time to be called upon, because, as the guest of your organization, I came for another purpose, but since I am on my feet I want to be fair with my profession; I want to be fair with myself; I want to be fair as a citizen, and I am going to give it to you as I see it. In the first place, Mr. President, I would be a very poor judge if I did not say this—that not more than ten per cent of this audience know—making ninety per cent of this audience apparently ignorant—of the case before them. I am talking to you as a member of your profession; I am talking to you as an editor who gave you both sides of the question, and I am talking to you as a citizen. Seventy-five per cent at least of this audience do not understand the proposition before them, and all this profession needs at the present time—Dr. Crouse or Dr. Summa, or any other man in this room—is just a little more time for conservative, honest judgment. The dental

profession is too old and too honorable and too venerable to take upon itself to form a snap judgment. This is a serious proposition; it involves principle, and it involves also personal gratitude, and when principle and personal gratitude are involved it usually makes the jury hang out in the jury room day after day until one or the other has gone by. We are fighting for principle and personal gratitude, the two hardest things to decide that ever come before any jury. And now I am going to ask you here today, don't pass a snap judgment; let it be known to the good judgment of the Iowa State Dental Society, for the welfare of the great State of Iowa you love, that you do not become personal, that you do not get warm and excited, that you reserve for yourself a judgment founded on what? Not on personal points, but on facts. Now, I think, my dear friends, that what this audience needs and what the entire dental profession needs is an honest statement of the facts, and as I have found it and have seen it, I believe, Dr. Crouse, that those who are opposing the situation are opposing it because they do not understand it, and they have a right to oppose it until they do understand it. Now, I know Dr. Taggart well enough to know that he is willing to wait. Dr. Taggart does not want a dollar that he cannot hold up in his hand and say: 'This is my dollar that I have gotten by honest means.' (Applause.) I know Dr. Taggart. I have known him for twenty-five years. I have taught prosthetic dentistry, and I have known him as a professional man; I have known him as a prosthetic practitioner; I have known him as a citizen; I have known him as a friend. In all fairness to Dr. Taggart, Mr. President, this whole thing does not concern him one bit. He does not appear in it. As I bring this thing up, it resolves itself into this, Dr. Crouse: It seems that a large number of the dental profession seem to think that changes were brought about in the Protective Association in rather too sudden a manner. Now, any one that knows your personality knows that when you get up to do something you do it very quickly, and you do it earnestly, and you do it strongly, and there are men in the profession who say: 'I would like to have seen it done, but I would like to have seen it done slower so that I might have really understood it,' and I believe, ladies and gentlemen, that when this thing is thoroughly understood we will be a united profession, that the profession will have gratitude in its heart and principle in its hand. We are all

big enough and strong enough and broad enough and fair enough to give Dr. Taggart that which belongs to him. There is not a man in this room that would not, as he walks down the street, take his hat off to Dr. Taggart and feel within his heart that he owes that man a debt of gratitude. (Applause.) Now, then, if that solves that problem, then the only thing to solve is the other thing, the other problem of principle. If the Protective Association—Dr. Crouse, Dr. Johnson and Dr. Buckley and others—will make it clear to these men that those changes in the constitution are right, they will be friends, but it must be shown to them. I have been with dentists all over this country, and all they seem to want is fair play. Now, let us just simply wait; let us not pass upon this until we are able to settle for ourselves that it is founded upon good judgment, not to value Dr. Taggart the less because we love our profession more, but we can solve this in justice to Dr. Taggart, and we can solve this and be fair with ourselves. If the Dental Protective Association and Dr. Crouse have made a by-law that is too severe or have placed upon its by-laws something that can be changed too easily in view of the fact that too much power may be put in the hands of a few men, the Dental Protective Association is large enough, I believe, and broad enough if that is the complaint to make it all along the line. I am a member of the Dental Protective Association, and it has done us a vast amount of good, but because I am a member of it I do not want to do things that are not absolutely fair and honest with all of us. Let us just be a little cool about the matter, because seventy-five per cent of this audience do not know the proposition, and if you were to honestly vote whether you were one of those to rise, you would remain in your seat because it is evident by what has transpired here that seventy-five per cent do not know what is going on. Now, let us take a little time and get the facts, get the details together and go forward as one great profession instead of straggling divided elements, as it seems to be.”—*The Dentists' Record*.

The foregoing clearly shows that the profession appreciates an independent journal which gives all sides and accords respect to speakers and writers when they deal fair, square and with some dare, on problems which confront the profession.

The writer takes this opportunity of expressing his deepest appreciation of the treatment accorded in that heated and excited dental gathering.

POPULAR LECTURES ON DENTISTRY FOR THE MASSES.*

The readers will be pleased to know what the State of Illinois' Dental Society is doing relative to dental education for the masses, as reported by Dr. C. E. Bentley, Chicago, chairman.

The Public Dental Education Committee, like all similar committees throughout the country, has been feeling and groping its way, during the last year. I should say we were in the nebulous state. Lacking in precedents and with an increasing demand on the part of the public that something be done, we have been trying to get things in focus. The amount of work to be done is staggering. The means with which to do it are at best wholly inadequate. With a year's work we are only beginning to get a true sense of the propositions before us.

In spite of the inadequacy of means and lack of precedents to guide us, we have accomplished some good work. We have done two things: We have gotten out a booklet entitled "Care of the Mouth" and had lectures delivered to lay audiences. Result: An acute interest in our propaganda on the part of the public wherever these two have gone.

First. 12,000 booklets entitled "The Care of the Mouth" have been sold to the members of the Society and they in turn have given them to their friends and patients where the most good could be done. The influence of these booklets has been far reaching. Innumerable inquiries have come to the Secretary of the Society and Chairman of the Committee regarding them from all parts of the country and in one instance from France. In two instances they have been adopted by teachers of physiology as text books in the school room.

The Child's Welfare Exhibit, which is to be held in the Coliseum in Chicago, May 11th to 26th inclusive, has ordered 10,000 for free distribution to the persons viewing the Mouth Hygiene Exhibit, which will be a part of that big, educational display.

Second. In the matter of lectures: It has taken the greater part of the year to organize a corps of lecturers for this work. We had first to agree upon what subject should be elaborated and select such slides as would be appropriate. Several kinds of lectures were

*Read before the Illinois State Dental Society, May, 1911.

needed for the work. For instance: The kind of lecture suited for a teacher's convention would be wholly unsuited for school children and both might be inappropriate for a mixed audience.

Again the calls from the state have invariably come for several men who are known for their facility of speech, who were included in the corps of lecturers, as published in the Bulletin.

In many instances these requests could not be met because these men could not leave their offices and practice at any and all times. But, in each instance another has been sent.

Lectures have been given in the following places:

Jacksonville, Ill., East St. Louis, Ill., by Dr. F. B. Noyes; Marion, Ill., Galesburg, Ill., Freeport, Ill., La Crosse, Wis., Milwaukee, Wis., Kalamazoo, Mich., by Dr. B. J. Cigrand; Aurora, Ill., Kankakee, Ill., by the Chairman of Committee.

Peoria is to have a lecture by Dr. A. D. Black, and the Chautauqua of Kankakee County by Dr. C. N. Johnson.

From the estimates given the Chairman by the lecturers and local men, probably 11,000 have been reached.

The Committee is indebted to the above named gentlemen and the General Committee for the unselfish sacrifices made in responding to the call for these lectures and the hearty co-operation given. No work, within the lifetime of any dentist present, has been more important and no responsibility to the profession, as a whole, has been greater.

The opportunity for our profession in this hygienic wave that is sweeping the country is tremendous. The responsibility is correspondingly great. If this wave should recede and the public should find that we have been unable to translate our talk into deeds, the finger of derision will be pointed in our direction.

The capital fact of the situation is that up to this time we have not demonstrated concerted ability to grapple with the situation. The cause lies near at hand.

First. There are too few men who are willing to give of their time and means to solve this problem. More men must be engaged in this work and small jealousies and petty contentions must be stifled for the good of the cause.

Second. We must give our money for this cause, for in giving we are laying foundations for a fuller return and are contributing

our mite to the great cause of humanity's betterment and until we make a definite contribution for this purpose, our profession will not receive that respect and regard that are justly ours. For all groups are judged not by what they do or can do for themselves, but rather by what they do and will do for the commonwealth.

We recommend that the booklets be purchased in larger quantities during the coming years and that they be spread broadcast, the cost can possibly be reduced to 2 cents per copy. It may be necessary to make a charge of \$10.00 and expenses to be paid by any local society asking for a lecturer next year. This money will go toward the procurement of slides, etc., necessary to carry on the work.

We have the assurance of the authorities of the Child Welfare Exhibit, that after the exhibition the Committee may, at a nominal cost, buy the dental exhibit. If this can be done the exhibit can be sent to towns before the lecturer arrives and placed in a prominent part of the town. People seeing these exhibits with the announcement of the coming lecture will have their interest quickened and the crowd can be assured.

Remember, the ultimate aim of all this work is the establishment of dental inspection in the public schools by dentists. Wherever that has been done two things have resulted, namely: a decided benefit in the health of the community, and an increase in the demands for the dentist.

Whatever else may be done, let us not forget that opportunity is knocking at our door and with it responsibility.

I know the dental consciousness will be aroused and we will solve this problem through co-operation, as we have solved others.

C. E. BENTLEY, *Chairman.*

F. B. NOYES,

G. W. COOK,

W. F. WHALEN,

C. E. BYINGTON,

C. N. JOHNSON,

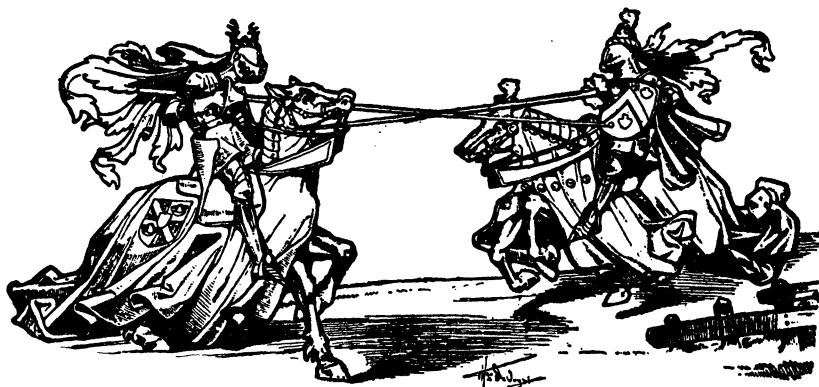
GEO. C. POUNDSTONE,

C. B. WARNER,

J. P. BUCKLEY,

G. W. DITTMAR.

PROFESSIONAL ARENA.



[In the space devoted to this department many of the so-called solved problems are to be opened for re-examination. Besides such other topics as are of greatest importance will be brought to the attention of the readers, and ablest talent will be engaged to discuss interesting dental themes. The subject under consideration for the present is: "Should the dentist charge by the time or service rendered?" We invite you to send in a short discussion on this problem. This is a topic in which all are concerned, and your opinion and experience is sought, as good will come from these comparative deductions.—EDITOR.]

SOUR MILK AS A DIET.

(Lactic acid may be hard on the teeth, but it has a good use in the system according to several authorities.—EDITOR.)

Among the eastern nations it has been the custom from time immemorial to consume milk in the sour state; indeed, in the East the drinking of milk in the fresh condition is hardly known. In ancient times soured milk formed one of the principal articles of dietary, and a well-known incident in connection with its use is the tragic scene between Jael and Sisera described in the Book of Judges. The fugitive Sisera, on the defeat and annihilation of his followers, fled to the tent of Jael, the Bedouin woman, and begged for a little water to drink; but, as the tale is told, she opened a bottle of soured milk and gave him that, and afterwards assassinated him. The story is interesting as showing that in Biblical times soured milk was well known, and its use under different names from then till now has been common in Egypt, Turkey, Bulgaria and many other Eastern countries, not so much as a beverage, but as an article of food. It was found then, as now, that during the warm weather it was impossible to keep milk fresh for any length of time, and the custom was

to add the fresh milk to a vessel or a skin sewed up so as to form a receptacle, in which the previous supply of milk had been kept in the soured state; this insured the souring process taking place immediately, so that there was no question at any time about milk being consumed in the fresh state. It must be remembered that milk in eastern countries did not necessarily mean the milk from cows, as that of camels, buffaloes, sheep and goats was used as well; and at the present day such milk is in common use throughout the East. In Russia, soured milk of mares, under the name of koumiss, is largely consumed on the steppes, and is not only considered to be nourishing and wholesome, but is also regarded as a cure for pulmonary diseases; and it is also looked upon as the principal agent in the prolongation of existence. In India the soured milk is termed dadhi; in Egypt it is called leben, and in the Balkan peninsula, where it is most commonly used, it is known under the name of yoghourt.

It is curious to find, in connection with the history of this wonderful preparation, that its use has been confined principally to the Eastern nations, and that it is only during recent years that it has come to be known in Western countries. There is little doubt but that the value of soured milk in the prolongation of life was known in ancient times, and if the apparently impossible ages which are credited to the patriarchs are reduced to the denomination of the present day, they will be found to be quite in accord with very ordinary phenomena in the Balkan states. In these countries thousands of centenarians are alive today, and many men and women live until they are 120 years of age, not because of their hygienic surroundings, which are not always of a satisfactory character, but because their principal article of diet is soured milk.

Some years ago that fact that so many people lived so long in Bulgaria attracted the attention of a number of investigators, who proceeded to study the life history of some of these centenarians, with the result that they found that the sole cause of the abnormal prolongation of life seemed to be the daily use of soured milk. The principal among these investigators was Professor Metchnikoff of the Pasteur Institute of Paris, and he conducted researches into the whole subject with the same thoroughness that has characterized his other investigations, and with the result that he has found conclusively that, provided the milk is treated in a certain way, and

soured by means of a particular organism, it will have a beneficial effect on the human system. Metchnikoff studied the matter from beginning to end, and eliminated from the innumerable micro-organisms which find a lodgment in milk one which predominated over them all, and is now known to science as the bacillus *Bulgaricus*, and which, if added in the pure state to milk which has been boiled, will produce souring of a particular character. The milk thus inoculated becomes a valuable article of diet and health-giving food.

It will be remembered that throughout the alimentary tract there are countless organisms present, and in the large intestines these seem to predominate more than anywhere else. As a consequence many diseases, including senility and the gradual breaking up of the human system, are traceable to poisons which originate from the putrefactive organisms which congregate in the large intestines. It was found that, while such was the case, there were no agents of a harmless character known to science which would overcome these putrefactive organisms; and it is only within recent years that it has been shown that the particular souring agent referred to, the bacillus *Bulgaricus*, is in reality the one master bacillus which will pass through the alimentary tract uninjured and finally predominate over the putrefactive organisms referred to. It will thus be seen that the bacillus *Bulgaricus* is well entitled to be called "the bacillus of long life," which is the name I have given it, and which, if it appeals to the imagination, is also strictly true.

"The bacillus of long life" is, therefore, a useful organism, and belongs to that category of bacteria which are in daily use for the souring of cream, the ripening of cheese, the making of vinegar, and similar operations. There are other bacteria of a putrefactive character which decompose foods and cause ptomaine poisoning, or they may produce disease. There are others again which are of an indifferant character, and do not affect the human economy either one way or another. Any one of these organisms, however, can be cultivated artificially; that is to say, they can be isolated from their surroundings and made to propagate alone on certain media, and by this means we are enabled to utilize such artificially cultivated organisms in any way that may be desirable. That is how it comes about that we can now procure a perfectly pure culture of "the bacil-

lus of long life," and, that having been done, the preparation of soured milk in the home becomes a comparatively easy matter.

It is desirable to take certain precautions in dealing with milk in the house, as it must always be remembered that it contains overwhelming numbers of different kinds of bacteria which have been taken up from the atmosphere of the byre, or in the passage between the dairy and the house, or which may have been taken up in the house itself. These organisms multiply enormously in a very short time, and the familiar souring of milk in hot weather is due to their presence. Such milk, it may be said in passing, is not fit for human consumption.

The best thing to do when fresh milk is received into the house is to boil it for about five minutes. The milk should then be allowed to cool for some little time and should be poured into bottles, which, by the way, must be scrupulously clean and which have been washed with scalding water and allowed to drain in the inverted position. A little tube of the pure culture to which we have referred is poured into the bottles containing the cooling milk and a clean cloth should then be put over them so as to keep out the dust. The temperature should be maintained at about 100 degrees Fahrenheit, which can easily be done by keeping the bottles in a warm place. One or two trials and the use of a clinical thermometer so as to ascertain the temperature will make any one quite an expert at this simple business. What happens is that the bacillus which has been introduced from the tube begins to multiply in the milk at once, and it does so because the temperature of about 100 degrees Fahrenheit is suitable for its propagation and as a consequence the milk assumes in four or five hours a thickish consistency. In this condition, and at the end of this time, it is in the best possible form for giving to children or to any one who does not care for the acid taste which develops later on. For the use of adults, the milk is kept in the warm state for from eight to ten hours from the time it was first inoculated and by the end of that time it will present a cheesy texture and have an acid taste. The soured milk may then be taken either after stirring it up briskly or it may be spread on bread, and a pleasing addition to many palates is a little fine sugar and just a sprinkling of cinnamon. Another pleasant way to take the soured milk is to mix it with scalded fresh milk and sip it slowly.

I have entered into the preparation of this wonderful article in detail in order to show that there is no difficulty in its preparation in the home, and also that the use of soured milk, far from being merely a medicinal one, can be made a very agreeable and pleasant, and I feel sure that in a few years' time its use will become universal among all Western nations.

PRACTICAL POINTS.

TO OBTAIN PROPER OCCLUSION FOR GOLD CROWNS.—After placing a suitable ferrule of gold on the tooth or root to be crowned, see that the gold will not interfere with the proper closing of the teeth, but rather have it a trifle too short, so as to make allowance for the gold cap which is to be united with the ferrule to complete the crown. I obtain suitable caps by swaging thirty-two gage pure gold in a crown die made for the purpose, then flow twenty-karat gold solder into this cup until it is level full. Now place this cap, which represents very nicely the cusps of a natural tooth, on the ferrule, and hold in place with the pliers, while the patient is instructed to close the teeth together. It is then easy to see what alterations are necessary, and they can be made in a few moments, so that the occlusion may be made perfect. The crown may be completed the next moment after removal from the mouth, by holding the cap and ferrule together while the heat is applied to a sufficient degree to sweat them together without the addition of any more solder, and when this is done you know you have a crown that will perfectly articulate with its antagonists.

This method does away with taking impressions and articulations, and for that reason it simplifies the operation.

Hoping this may prove "news" to some of your readers,

A. W. McCANDLESS.

EUROPEAN PROGRESS

CONDUCTED BY THOS. L. LARSENEUR, D. D. S.

MODERN VIEWS OF SYPHILIS.*

BY JAMES FROUDE FLASHMAN, B. A., B. SC., M. D., CH. M.

(*The Commonwealth Dental Review*, Sidney, Feb. 15, 1911.)

My address to you this evening is the outcome of a conversation which I had with one of your members in regard to the precautions taken by the members of your profession to guard against the acquisition of this disease. He informs me that it was a subject which he had never taken into consideration. I pointed out to him that such an attitude of mind was one fraught with great danger to those, like himself, liable to come into close personal contact with virulent cases of the disease. Later on, I received a request from your secretary asking me to give an address before your society on the subject. To this request I gladly assented.

It may be news to many of you that this disease has been acquired by a very large number of both medical men and dentists in the practice of their profession. The first lesion in such cases is usually to be found on the hands or face. Further, I have recently seen professionally quite a number of acute syphilitic patients who stated their intention of consulting a dentist in the immediate future. It occurred to my mind that a dentist who might be ignorant of the acutely infectious nature of the disease from which these people were suffering would need to exercise in a routine manner the greatest care in his treatment of all cases to avoid a calamity which could only be recovered from after the lapse of many years. During the last decade or so, our views in regard to syphilis have materially altered. It has long been known to be a definitely contagious disease. But, beyond some general notion that it was a blood affection, we knew little more as to its real nature. The first great advance was made towards the end of the last century by Schaudinn, who discovered the cause of the disease. He found that it was of a protozoan nature, and he was able to isolate from the primary sore a little body to which he gave the name *spirochaeta pallida*. Proof that this protozoan is actually the cause of syphilis has gradually been accumulat-

*(Read before the New South Wales Society of Dental Graduates.)

ing since the time of Schaudinn, and one may say that today scarcely any prominent syphilologist doubts its casual connection with the disease. It has been known that this organism is present in the most varied manifestations of the disease. Lesions which have occurred years after the primary infection have, when carefully searched, given evidence of its presence. It has even been found in some nervous disorders which have long been looked upon as probably of syphilitic origin, though many such cases give no history of a primary infection. It may be said that the demonstration of this organism placed our view of syphilis and syphilitic manifestations on a definite scientific basis. The disease was no longer to be regarded as a vague blood disease, but fell into line with the other infectious diseases, many of which as has long been known, owe their origin to invasion by certain biological (chiefly bacterial) agents. Medical science was at once enabled to comprehend more accurately the many peculiar effects produced by the malady. One of the greatest results of this discovery was the application to the diagnosis of the disease of a principle which had only recently been discovered in connection with bacterial infections. Somewhere about the year 1905, a peculiar method of diagnosis—about which I shall speak more fully later on—was discovered in connection with tubercular disease. This method was found to be very efficient, but very tedious and very cumbersome; and, seeing that we had already methods of diagnosis in the case of tubercle, this new method was looked upon as of only scientific interest.

In the following year, however, the idea occurred to a few German scientists, conspicuous among whom was the director of Koch's Institute in Berlin, Herr V. Wassermann, that possibly this new diagnostic method might be applicable to the diagnosis of syphilis. In this disease, in many of its stages, we had previously no possible method of determining its presence. The idea of Wassermann and his confreres led to the happiest results. In the course of their investigations, they found that an extraordinarily large percentage of cases of the disease were diagnosable by the new procedure. The time which has elapsed since this original discovery has only served to confirm the impression which the first experimenters gained from their work, and today this method is in common use in practically every city in the world.

As the method is thus of great interest and is also based on principles applicable to other diseases, I think it will interest you if I give a short account of its details. In doing this, I must make a few preliminary remarks. For the sake of brevity in discussion and writing, a term has been invented to cover all biological causes of factors as the tubercle bacillus, diphtheria bacillus, typhoid bacillus, diseases. This term is "antigen," and it embraces such biological and all other bacilli causing disease in man or animals. Besides these bacteria, the term also covers disease-producing protozoans, amongst which is numbered the spirochaeta pallida. Another point which I would also like you to notice particularly is that these bodies, when causing disease in an individual, have the effect of *producing in the blood of that individual a substance* to which the name of anti-body is given. It is further a fact that each bacillus or protozoan produces in the blood its own anti-body; so that we find that the anti-body produced by the tubercle bacillus is of quite a different nature from that produced by, say, the typhoid bacillus. One may also say that these anti-bodies are practically *always* produced when a person becomes infected with any particular organism, that is, when he suffers from any particular disease. We are, therefore, able, in a case of typhoid fever, to demonstrate the presence in the blood of such a case of typhoid anti-body. In a case of plague, we can demonstrate the presence of a plague anti-body. In the case of syphilis, we are able to demonstrate a syphilitic anti-body. The specific nature of these anti-bodies is so marked that we can always distinguish which particular anti-body we have to deal with.

From a consideration of these facts, one can now understand that it is sufficient to demonstrate the presence in the blood of any individual of a definite anti-body to prove that this individual is suffering from a certain disease. Therefore, if we prove that an individual contains in his blood this syphilitic anti-body, we can assert that the patient is suffering from syphilis.

The next thing for me to do is to explain to you how the presence of this anti-body in the blood can be detected. You know that the blood consists of cells floating in a fluid. During recent years, it has been shown that this fluid possesses an enormous number of different properties. We are not able, so far, in most cases, to separate out a substance from the blood and say, "This gives the blood a cer-

tain property." We are only able to say that the blood does possess, under certain circumstances certain activities. For example, you all know if we inject in the blood of a horse large numbers of attenuated diphtheria bacilli, the blood of the horse acquires the power of curing diphtheria in a child if some of the horse's blood, or, rather serum, containing this curative property differs in no way in appearance from the blood or serum of an ordinary horse. We are not able, that is, to see the body which produces this beneficent result. We can only say that the blood of this injected horse possesses an anti-toxic property. One of the properties of all blood which is important for the method of diagnosis which I am about to describe is a property termed "complement." These properties must have a physical basis and therefore though they have not been isolated, we speak of them as substances. I wish you to carefully bear in mind that this complement is present in all blood. Further, I would like you to note that it is destroyable by heat at 55 degrees C.

We will now pass to the consideration of a peculiar phenomenon. If I inject sheep's red blood-cells into a rabbit, the serum or fluid of that rabbit's blood acquires the power of dissolving up similar sheep's corpuscles when the two are mixed together in a glass. That is to say, if I obtain some sheep's corpuscles and inject them into a rabbit and, after some days, draw of a little of the rabbit's blood from a vein in its ear, allow it to clot, and take the clear fluid which surrounds the clot, I will find, if I pour this fluid, termed serum, on to a few red blood-cells of a sheep these cells will be almost instantly dissolved; with a result that this colorless fluid becomes uniformly stained a claret color. Had this rabbit not been previously injected with sheep's blood corpuscles, its serum would have had no effect in destroying the blood cells. By being injected with sheep's red blood cells, the serum of the rabbit has acquired the power of destroying such cells.

I will now point out a few peculiarities of this power acquired by the rabbit serum. If the serum be heated for a short time to 55 degrees C., it no longer possesses its property of dissolving sheep's blood cell. If, however, a little serum from any other animal be added to the mixture of such heated rabbit serum and sheep's corpuscles, the latter are immediately dissolved. From this we infer that the power which the rabbit's blood possesses of destroying sheep's

corpuscles depends upon two factors, one of which is destroyable by heat at 55 degrees C., and which is present in any other normal blood serum, and one which was produced in the rabbit by the injection into it of sheep's blood cells. In fact it has been demonstrated that the body which was destroyable by heat is the body we have already spoken of as complement. The other body which was produced in the rabbit by the injection of the sheep's blood cells is termed immune body or embocyteptor. This latter body withstands considerable heat.

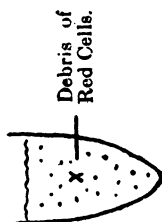
You will see, then, from what I have said, that if we mix in a glass sheep's corpuscles, the serum of a rabbit containing immune body and a little complement, the sheep's corpuscles will be dissolved, or, as we say, haemolysed. One may put into a glass sheep's blood corpuscles and heated rabbit's immune serum and get no destruction of the red cells, for the reason that the heating has destroyed the complement.

Now, for the purpose of our syphilitic test, we prepare these three bodies in separate tubes, in one tube we have sheep's red blood cells. In a second tube we have heated immune serum. This tube contains, therefore, for our purpose, only immune body and no complement. In the third tube we have some serum from any other animal, preferably a guinea pig. This tube will contain complement. We have only to mix the contents of these three tubes and the red cells will be destroyed. If they are destroyed we will as I said before, get a uniform red coloration throughout the glass in which the mixture has been made; whereas if the red cells are not destroyed, we will see that they slowly fall to the bottom of the tube, leaving a clear fluid above.

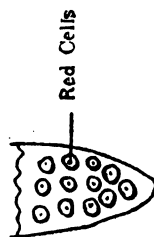
Having now explained this phenomenon termed haemolysis, or destruction of red blood cells, I will now ask you to give your attention to another very important fact. I have explained to you what we mean by antigen and what we mean by anti-body. We have also seen something of the nature of complement and immune body. The great principle upon which the Wasserman diagnosis of syphilis depends is that, *if one mixes antigen in a glass with its corresponding anti-body, any complement added to the mixture becomes destroyed.* Therefore, if I take an extract of spirochaetes, mix it in a glass with blood serum of a syphilitic patient and then add a little complement, such complement becomes destroyed. Now, if then making a test,



If 1, 3, + 6 be mixed, and later 4 + 5 be added, one gets hemolysis, as :—



If 2, 3, + 6 be mixed, and later 4 + 5 be added, one gets no hemolysis, as :—



1—Normal Blood Serum.

2—Syphilitic.

3—Complement.

4—Immune Body.

5—Red Corpuscles of Sheep.

6—Syphilitic.

the complement when added is destroyed, it follows that there must have been in the patient's serum a syphilitic anti-body, because it is only the presence of antigen and anti-body that the complement can under these conditions be destroyed.

If, then, one be faced with the problem, "Has such-and-such a person got syphilis?" one has only to take some of his serum, heat it to 55 degrees C. to destroy the complement, pour into the glass with an extract of spirochaetes, add a little fresh measured amount of complement and observe whether the complement is destroyed or not in order to be in a position to solve the problem.

Since the three substances which we have mixed in the glass together are all transparent, you may perhaps inquire how one can tell whether the complement is destroyed or not. Well, this is ascertained in the following manner: After the patient's serum, the extract of spirochaetes and the complement have remained together in the glass for one hour at blood temperature, to give time for possible destruction of the complement, a little immune serum and a few sheep's red blood cells are added to the mixture. If the red cells so added are dissolved, we know that I have previously said that there must be still present in that tube active complement, because solution of red cells were all together at the one time.

If on examining the tubes we find that these red cells have not been destroyed, we know that none of the complement previously added is now left. We infer, therefore, that it has been destroyed by antigen and anti-body. The only possible source of this anti-body in the glass was the patient's serum which we poured in. We therefore conclude that the patient's serum contains a syphilitic anti-body, and, therefore, the patient is suffering from syphilis.

This, then, gentlemen, is an account of the great diagnostic method which Wassermann has given us for the detection of this disease. Of course, like every great discovery, it has its limitations. But I don't intend to go into that question this evening, as it would involve too much detail. Although, in the description of the method, I have to ask you to concentrate your attention carefully on the sequence of events, yet I think you will find, on considering the matter, that each event is simple in itself and readily follows from the premises stated. I would like you to remember that this is not an isolated method of diagnosis, but is one example of application of a

great principle in medicine. I think in the future you will find that this principle will be so greatly recognized and have such a great influence on practice that it will be necessary for wearying you with so many details.

Before I conclude what I have to say this evening, I would like to take a short review of the subject as it concerns your profession. Today we know that syphilis is a contagious disease due to a definite organism, the spirochaeta pallida. This disease lasts in an individual, even if he be well and effectively treated, for many years. We know that it is a disease which may produce marked deleterious effects on the nervous system. We know that it may be communicated to others and may be handed down to the patient's descendants. We know that in many stages of the disease the patient is infectious to others by means of his saliva. Under such circumstances the saliva can be shown to contain numbers of spirochaetes. Further it has been conclusively proved that vessels or instruments contaminated with such saliva may, even after a considerable time, communicate disease to others. From a consideration of these facts I think you will agree with me that every effort should be made to instruct young men entering your profession in some of the details of this disease, and specially the means by which it is propagated. As I have already remarked, a very large number of medical men and dentists have been infected in carrying out their professional duties in regard to such patients. For obvious reasons such cases of infection do not come to the knowledge of many of us; and I would ask you not to think that I am warning you where no warning is necessary. The danger from a case of syphilis threatens not only the dentist, but the succeeding patients. I think none of you will disagree with me when I urge that every instrument introduced into a patient's mouth should be known to be in a thoroughly sterile condition.

But there are many other conditions besides syphilis which are communicable by infected, though apparently clean instruments. For the attainment of proper efficiency, the members of your society must strive to set a high standard in the observance of surgical cleanliness.

TRIGEMINE.

Les Nouveaux Remèdes.) (*Le Laboratoire et le Progress Dentaire Reunis*, Paris, Mar. 19, 1911.)

Trigemine is a combination of *pyramidon* with hydrate of chloral-buthyl. Owing to the analgesic properties of its components, trigemine is a powerful analgesic and may be considered as a specific of the pains caused by pulpitis and pericementitis which are characterized by lancinating pains.

The administration of two capsules containing each 0. gr. 25, will notably diminish the pains in 10 minutes and will relieve of all pains in 10 more minutes.

From the experiments made with numerous cases, it has been found that the analgesic action of trigemine is far superior to that of the other analgesics which are usually used such as: antipyrin, phenacetin, aspirin, of which the administration is followed by serious gastric and kidney troubles.

ALUMINUM SOLDER, NEW.

United States Patent No. 931,523, granted to Zoltin Tomassy, Aug. 17, 1909, gives the following formula for a new solder for aluminum: Zinc 8 ounces, tin 8 ounces, antimony 130 grains, salicylic acid 44 grains. The metals are melted together, and the acid then added. The solder is used in the usual manner, but a blowpipe is preferred as a source of heat.—*The Brass World*.

100,000-YEAR TOOTH.

The *Evening Times* of London, says: "A huge tooth of the mammoth, *Elephas primigenius*, has been found by workmen engaged in excavating on the Great North Road at Biggleswade for the sewerage scheme. An authority on prehistoric man has examined the tooth, and states that the mammoth was a common animal in northern Bedfordshire 100,000 years ago. That man lived in company with this mammoth is considered proved."

Not even the mammoth can escape the levelling tendency of the modern inquisitor. Even *Elephas primigenius* has to submit to the horrid insinuation that he was "common" 100,000 years ago. An authority on prehistoric man is not necessarily an authority on the

mammoth, neither does "100,000 years ago" mean anything more than "a very long time," as all such dates are nothing but guesswork. Still, at one time, so says the authority on prehistoric man, the mammoth was common about Biggleswade way; possibly prehistoric man was pretty rare at that epoch. The question is, has Biggleswade gained or lost by the change? The authority is sure that man lived in company with the mammoth—no doubt he did; man drew pictures on mammoth tusks—perhaps it would be more exact to say that the mammoth *died* in company with man. Anyway, it is a mixed company, on the whole uncongenial, with a lot of tragedy in it for all concerned.

FOR THE TREATMENT OF FOETID BREATH.

Have the patient rinse his mouth several times a day with a glassful of water to which a dessertspoonful of the following mixture has been added:

Sodium bicarbonate	5.50 gram
Saccharin	5.50 "
Salicylic acid	5.50 "
Alcohol	200.00 "

Frequent rinsing, especially after meals, with water to which a teaspoonful of the following solution has been added, is also recommended:

Crystallized phenol	2.50 gram.
Salicylic acid	2.50 "
Sodium borate	5.00 "
Menthol	3.00 "
Essence of thyme	2.00 "
Tincture of aniseed	10.00 "
Alcohol (90 per cent.)	125.00 "

—*Revue Internationale de Prothese Dentaire.*

JOURNALISTIC GEMS.

MODERN THERAPEUTICS.

Strickland W. Gillilan in "Judge."

I went to a modern doctor to learn what it was wrong.
I'd lately been off my fodder, and life was no more a song.
He felt of my pulse as they all do, he gazed at my outstretched tongue;
He took off my coat and weskit and harked at each wheezing lung.
He fed me a small glass penstalk with figures upon the side,
And this was his final verdict when all of my marks he'd spied:

"Do you eat fried eggs? Then quit it.
You don't? Then hurry and eat 'em,
Along with some hay that was cut in May—
There are no other foods to beat 'em.
Do you walk? Then stop instant—
For exercise will not do
For people with whom it doesn't agree—
And this is the rule for you:
Just quit whatever you do do
And begin whatever you don't;
For what you don't do may agree with you
As whatever you do do don't."

Yea, thus saith the modern doctor, "Tradition be doubled durned!
What the oldsters knew was nothing compared to the things we've
learned.

There's nothing in this or that thing that's certain in every case
Any more than a single bonnet's becoming to every face.
It's all in the diagnosis that tells us the patient's fix—
The modern who knows his business is up to a host of tricks:

Do you eat roast pork? Then stop it.
You don't? Then get after it quickly.
For the long-eared ass gives the laugh to grass
And delights in the weed that's prickly.
Do you sleep with the windows open?

Then batten them good and tight
And swallow the same old fetid air
Through all of the snoozesome night.
Just quit whatever you do do
And do whatever you don't;
For what you don't do may agree with you
As whatever you do do don't."
(The above is a joke, but it has truth in it.—EDITOR.)

THE TEETH AND ALVEOLAR PROCESSES AS POINTS OF ENTRANCE FOR THE TUBERCLE BACILLUS.*

FREDERICK B. MOOREHEAD, A. B., D. D. S., M. D., CHICAGO.

Tuberculosis is probably the most discussed problem in medical science today. The internist, surgeon, gynecologist, ophthalmologist, dermatologist, laryngologist, orthopedist and dentist—all have a common interest in the problem. The tubercle bacillus is a free lance, defying and challenging all tissues. It invades the territory of every medical specialist without apology. No one can gainsay the statement that it is ubiquitous. It is looked on by the layman as man's greatest physical foe. More money, thought and skill have been contributed to conquer it than any other enemy of the physical man. All this is sufficient reason for discussing the question, even in a very limited way, and yet, the mouth is probably the most serious factor in the matter of infection from this organism.

The tonsil as a gateway of invasion is fully appreciated. It has been carefully studied and discussed. Medical literature in the past five years bears eloquent testimony to the splendid work which both the specialist and internists have done in the premises. Dmochowski found tubercle bacilli in lymph-vessels of tuberculous tonsils which led to involvement of the cervical glands. Hanan, Schlenker and Krueckmann demonstrated similar results by exact pathologic-anatomic demonstrations.

While many statements have been made concerning the mouth in its relation to the tubercle bacillus, not much has been done in the

*Read in the Section on Stomatology of the American Medical Association, at the Sixty-first Annual Session, at St. Louis, June, 1910.

way of scientific study. This statement is a more or less severe indictment on the mouth specialists. Although mechanical dentistry has made splendid progress and has contributed in splendid fashion to the weal of society, nevertheless the most serious question which the mouth specialist faces is that of disease, its recognition and treatment. Diseased conditions of the mouth must always be studied and interpreted in their relation to the whole organism. This indicates very clearly the nature of the training needed by the one who is to occupy the field of stomatology.

In a rather comprehensive study Odenthal¹ found that 70 per cent of all children were affected with enlarged lymphatic glands. It is a well-known fact that the lymph-glands in children are more easily irritated and involved than in adults. This is particularly true of tuberculosis of the cervical lymph-glands. The reason is obvious—the root canals render the invasion of the tubercule bacillus more likely and easy in children than in adults.

A simple statement here, concerning the cervical lymphatic glands, will be of interest and service. The body of the mouth, the submaxillary and sublingual glands and gums are drained by the vasa efferentia of the submaxillary lymph-glands. There are about a dozen of these, of various sizes, found on the inner surface of the mandible beneath the platysma. A number of small glands may be found on the lower margin and external surface of the mandible. Their vasa efferentia accompany the anterior facial vein. The relation of the roots of the teeth and alveolar process to these lymph-channels is an important consideration and concerns not only this phase but the entire field of medicine. "The superficial cervical glands are placed in the course of the external jugular vein, between the platysma and deep cervical fascia. They are most numerous at the root of the neck, in the triangular interval between the clavicle, the sternomastoid and trapezius, where they are continuous with the axillary glands. A few small glands are also found on the front and sides of the larynx. The deep cervical glands are numerous and of large size, forming an uninterrupted chain along the sheath of the carotid artery and internal

1. Odenthal: *Carlöse Zähne als Eingangspforte infectiosen Materials und Ursache chronischer Lymphdrüsenanschwellungen am Halse*, Inaug. Diss., Bonn, 1897.

jugular vein, lying by the side of the pharynx, esophagus and trachea, and extending from the base of the skull to the thorax, where they communicate with the lymphatic glands in that cavity" (Gray's Anatomy).

A route which is direct and brief in extent thus leads at once from the mouth through the tissues of the neck to the thorax. One is very apt to think of the mouth as brought into relation with the body by way of the esophagus and trachea. Here, however, in this lymphatic system is a nexus which, in many respects, from a pathologic standpoint is more vital than that afforded by the esophagus and trachea combined, vital as they are. It is a fact familiar even to laymen, and one which I need not discuss at length, that the tubercle bacillus, along with other pathogenic micro-organisms, enter the body freely through the esophagus and trachea. Here the invading organism is confronted, under normal conditions, by a "foeman worthy of his steel," a healthy epithelium. The same organism, gaining entrance through the lymphatics, finds a much more fertile field with a limited defense.

In 978 children (between the ages of 4 and 13) examined by Odenthal, 429 had progressive caries of the teeth. Of the 429 all except 4 had cervical lymphadenitis. In 237 of the 429 the teeth were badly broken down and the glandular enlargement was more pronounced. In 79 of the cases there were other pathologic lesions which could be assigned as responsible for the lymphadenitis. In 359 cases no cause could be assigned save carious teeth. In 131 cases caries were found on one side only, and in all of these the glandular enlargement was on the same side. Pedley examined 3,145 children and found that 77.5 per cent had various teeth with more or less pronounced cervical lymphadenitis. Ungaware examined 100 children and reports 87.2 per cent with carious teeth. Felschel examined 335 orphans in Hamburg and found carious teeth in 96.4 per cent. Reese examined 13,167 children in Thuringen and Baden and found that 79 to 99 per cent had carious teeth. The above children were between 6 and 14 years of age. Out of the 100 recruits examined by Cunningham 96 had carious teeth.

Unfortunately the authors quoted do not give data covering the percentage of glandular enlargements, clinical or microscopic diagnosis.

The figures are, nevertheless, very interesting, as they indicate the great opportunity for the tubercle bacillus to gain entrance.

Of the children with enlarged cervical glands examined by Starck² 80 per cent had carious teeth. After obtaining a careful history and making a thorough examination of each case he accepted 16 per cent of the 80 per cent as having a hereditary predisposition to tuberculosis. In 41 per cent of the 80 per cent no other cause could be assigned except carious teeth. The average age of the children examined was 8½ years. Starck made an observation which is in keeping with my own experience, namely, that the extent of the glandular involvement corresponds with the number of carious teeth, and the extent of the carious process.

Cornet demonstrated before the tenth meeting of the German Surgical Society that he could produce tuberculosis of the cervical lymph-glands by inoculating pulps of teeth through artificial cavities. In animals he got the same results by rubbing cultures of tuberculosis between the lower incisor teeth, clearly demonstrating that the bacillus may enter either by way of the pulp chamber and root canal or the alveolar process. Baumgarten fed animals on tuberculous material, and in every case produced tuberculosis of cervical lymph-glands. In all of the animals the tonsils also were affected. Morelli and Jaruntowski³ have clearly demonstrated the presence of the tubercle bacillus in carious teeth of patients suffering from phthisis. In this connection Hoppe has tried to prove that the presence of the tubercle bacillus is as frequent in the carious teeth of healthy as of tuberculous subjects. He examined decayed material from thirty-one carious teeth and found the tubercle bacillus in twenty-three. These were from healthy subjects in which the decay had reached the pulp.

Israel has conclusively demonstrated the infection of cervical lymph-glands by actinomycosis through the teeth.

Ruehle reports the case of a boy with *Spitzenaffektion* of the left side. The cervical lymph-glands on the same side were extensively

2. Starck, Hugo: Der Zusammenhang von einfachen chronischen und tuberkulösen Halsdrüsenanschwellungen mit cariösen Zähnen, Beitr. z. klin. Chir., xvi.

3. Jaruntowski: Ueber Tuberkulose des Zahnfleisches, Zahnärztl. Wchnbl., viii, No. 3701.

involved. The process began by the enlargement of a single gland beneath the first molar. He demonstrated that the gland was thuberculous, but it is not certain from the record whether he found the bacillus in the molar tooth, which was badly decayed, though one would infer that he did.

IMPRESSIONS AND CASTS.

BY DR. GEO. H. WILSON, CLEVELAND, OHIO.

Definition—An impression is a *negative likeness* of an object or part taken in a plastic material, from which a cast or a *positive* likeness may be produced.

Scheme—When the prosthetist determines to construct a base-plate artificial denture he at once decides upon its general form and extent of surface to be covered with the base-plate. He also forms a tentative plan for retaining the artificial denture. This plan for retention may be altered or abandoned, as a result of a future critical study of the case, nevertheless, a definite scheme must be in mind contemplated appliance should be obtained. An impression that is before taking the impression, because an impression suitable for the most desirable for orthodontia may be entirely inadequate for prosthesis; and certainly an impression that is desired by either the orthodontist or the prosthetist may be distorted for the other. This statement is made to impress the student that an impression is not necessarily an exact negative likeness of a part, but it must be perfect in its suitability for the work in hand. The soft tissues is the factor that creates the variability in impressions. Rarely is an impression perfect for its intended use unless the soft tissues are, to a greater or lesser extent, distorted; nevertheless, this distortion must be suitable for its intended purpose. The methods herein detailed are for base-plate work. However, there is much in common, in impression taking for all specialists. The extent of the impression should be governed by the kind of an artificial denture required, whether a partial or full, a saddle or adhesive base-plate. The impression should extend a little farther in every direction than the contemplated base-plate; but any excessive extension is unnecessary discomfort for the patient, and shows indifference or thoughtlessness on the part of the prosthetist. Therefore, a definite scheme or plan of procedure should be devised for the case in hand, and good work-

manship requires that every step shall be neatly and accurately performed. This is a fundamental principle of mechanics, and, as a profession is superior to a trade, the prosthetist should show superior manipulation. Another thought for the young student of dentistry is this: There is no legerdemain associated with prosthesis, the profession is only an expression of cause and effect; therefore, it behooves one to cultivate thoughtfulness and thoroughness in manipulation.

CASTS.

Definition—A cast is a reproduction in plaster of Paris, or its compounds, or some plastic material, or an object or part, made from an impression or mold. Casts are used to give their negative likeness to an artificial denture.

Unfortunately there is much confusion in dental nomenclature in the use of the term cast and model. There is no authority outside of the dental profession for calling a cast a model, as is too commonly done in vulcanite nomenclature, and such indifference in the use of technical terms can only lower one in the estimation of learned people. "Cast" is from "kasta, throw," and is used in the sense of throwing, pouring or forming a plastic material in a mold or impression. The term "cast" is applied to objects made of plaster of Paris, wax and similar substances, while the term casting is usually applied to metallic objects formed in molds.

Model is from *modus, measure*, and is defined as: An object representing accurately something to be made or already existing. A material pattern of natural, heroic or diminutive size. Model is differentiated from pattern in that a pattern is usually flat while a model has material contour.

In sculpture, the model is the plaster or clay original of the work to be executed in stone or metal. A person who does duty as a copy for painters or sculptors.

A sculptor may idealize his living model, but his workmen must exactly copy the clay model made for him.

Even the dressmaking trade uses the term model correctly. They use a model to give its form to the human body, also to the external surface of the garment. It is only an incident that the garment is made over the model, for the object sought is to give form to the outer surface of the garment.

The photographer speaks of his negatives, not of his pattern or model. If he uses the term model he uses it correctly and applies it to his subject, not to the intermediate, negative.

A dentist uses casts, castings and models, and he should, if he is a member of a learned profession, differentiate and use his terms intelligently and correctly. A cast is anything formed while in a plastic state, in a mold or impression; casting (noun) is a term applied to metal casts, and model is an object to be copied, but it is a positive not a negative copy. Of all the arts, sciences and crafts dentistry alone uses the term in both a positive and negative sense. Such use is entirely inexcusable, because it leads to confusion of thought, besides there is no dearth of correct terms in common use.

It is interesting to note the origin of this use of the term model in dentistry. At the time of the introduction of vulcanite, during the fifties of the last century, plaster models were in constant use for constructing dies for metal base-plates. As vulcanite work is constructed upon the plaster form in place of a metal form it was only natural that the familiar term *model* should be retained for the new use. Unfortunately the teachers and writers of text books, at the time of the introduction of vulcanite did not give sufficient thought to the philology of the glossary required for the new art; hence, some of the terms that have come down, even to this day, are not scientific.

A plaster model is never used in vulcanite work as ordinarily constructed. Plaster casts are used. A plaster cast gives it negative likeness only to the inner surface of a vulcanite denture; therefore, cannot correctly be called a model. Orthodontists make plaster casts of cases as records of progress and completion. A plaster cast becomes a model only when it is used for duplication.

Uses for Casts—There are two general uses for casts in dentistry: 1st, as a form over which something is constructed. 2d, as a model or copy.

Materials for Casts—The material for casts must be chosen for the purpose to which it is to be put. The materials may be classified as follows: 1st—Plaster of Paris. 2d—Spence plaster compound. 3d—Plaster compounds known as "investment compounds." 4th—Wax and its compounds as models for metal castings.

Plaster for Casts—From the study of the expansion, contraction

and compressibility of plaster it is obvious that its use is limited, and that dental operations often require casts that are less subject to change by heat and pressure. While some operators are accustomed to use building plasters for certain purposes it is better to confine oneself to plaster especially manufactured for dental purposes. This is true also of the various compounds of plaster for special use. Much danger of unsuitable material may thus be avoided. For all purposes, when little heat or pressure is to be used, French's *regular dental plaster* serves an excellent purpose. This plaster is found in all well stocked dental supply houses, and is the only plaster carried by many of them.

Spence Plaster Compound—This is an excellent preparation of Plaster of Paris, Portland cement and chemicals to control its setting and expansion properties. This material has four times the strength of dental plaster, and the expansion is nearly at zero. As the material is now placed on the market, if properly worked, its setting time is about the same as slow setting dental plaster. Dr. Stewart J. Spence of Chattanooga, Tenn., has certainly produced a very valuable material for casts which are to be subjected to moderate heat and considerable pressure. It is especially adapted for casts for vulcanite work.

It may be well at this time to consider tersely the important addition to plaster in the production of this compound. *Portland Cement*—This term was first used in 1824 and was given to a patented cement manufactured at Leeds, Eng. It is made by calcining and grinding a suitable mixture of lime and clay. It may be considered as a silicate of lime and alumina. There is a greater variety of cements grouped under the general heading of Portland Cement than of plaster. The student should not consider that any mixture of cement purchased upon the market and plaster will answer the same purpose as that bearing the name of Spence, because the Spence compound is the result of much study and experimentation.

Working Spence Plaster Compound—The mixing of this compound with water is much more laborious than mixing plaster of Paris. The ratio of water to the compound as now placed upon the market, is one to four. For a cast a fluid ounce of water is placed in the plaster bowl and three measured ounces of the compound are added and thoroughly spatulated with a very stiff spatula until it

becomes soft and plastic, after which a half ounce more may be thoroughly incorporated. The remaining half ounce may be better added one-half at a time. It must be spatulated, and kneaded in a bowl until the mass is putty-like in consistency, if on continued working it becomes salvy, more of the compound should be added. When properly mixed it can be handled with the fingers and requires to be well packed in filling the impression.

Investment Compound Casts—This class of casts is designed to stand high heat and must be made of a material suitable for its intended use. The supply houses furnish many of these compounds which answer a good purpose. They consist largely of Plaster of Paris for a bond to combine the materials and such materials as will well withstand high heat, either singly or in combination. Of the materials used may be named: Sand (silica), clay, lime, asbestos, pulverized calcined fire clay, Portland Cement, oxide of iron, pumice stone, chalk, etc.

Working Investment Compound Materials—These materials are worked at about the consistency of plaster of Paris. Owing to the small quantity of plaster they contain they will require much less water than pure plaster; usually one measure of water to three or four of investment compound.

Price's Artificial Stone—This is a recent material invented by Dr. W. A. Price of Cleveland. It is a silicate cement and when properly manipulated it becomes very hard, strong, unchangeable and will withstand the highest heat of any compound known in the dental laboratory.

How Worked—The powder is mixed with the liquid accompanying it, upon a mixing slab, with a spatula. It is then formed into the mold or impression of wax, or over the wax model. It is permitted to set for a few hours, after which it is heated to a full red heat; it is then hard and unchangeable. It is excellent for that for which it is designed, but is not suitable for ordinary investments.

Wax and Compounds—There is a variety of preparations in the dental supply houses composed of wax, paraffin, gum and terpene. They are formed in a mold or impression, and then the wax cast is used as a model for producing a metal casting. This material is often carved into form for a model. Such a model cannot be spoken of as a cast because it was not formed in a cavity.

Tray Forms—The form of the tray should be such as to approximate the form of the part of which the impression is to be taken. This would require a great variety of trays, therefore it is desirable to have the trays constructed of a material that can be readily adapted to the individual case. These changes are made by cutting away the undesired portion, or, by bending in or out the portion not properly adjusted, or, the desired form may be obtained by adding some plastic adhesive material, such as wax or modelling compound. This added material should not be considered as a part of the impression, but as a part of the tray only; as the surface outline of the built up tray would be such as a specially constructed one should have. In fact some prosthetists have advocated taking a crude impression and making a plaster cast from which a tray is constructed. (Dr. Bean's method, Turner's American Text Book.) This tray would have the advantages of requiring but a small amount of impression material, and of carrying it accurately into place. Such methods require too much time and work, and do not meet the requirements of really difficult cases. The metal tray should approach equally all the surfaces to be impressed. There should be a space of about one-eighth of an inch to be occupied by the impression material. This will give sufficient body of material for strength, and in case of fracture of the impression the pieces are thick enough to be readjusted. The exception to the one-eighth inch rule is where compression of the soft tissues is required. In such cases no stock tray could possibly meet the requirement; but a simple stock tray can be reinforced so as to perfectly fill the requirement. It is wise to reject all fanciful and complicated trays, depending entirely upon the simplest forms.—*The Pacific Dental Gazette*.

A great many good amalgam fillings are spoiled by the patient eating on them too soon; the dentist having neglected to instruct them to forego eating until a sufficient length of time (according to the grade of alloy used) had elapsed for them to harden.

IN MEMORIAM.

Dr. Charles P. Gilpin, a dentist of Chestertown, Maryland, died July 5th. He was 55 years of age and unmarried.

Dr. Henry C. Victor, a practicing dentist in Lincoln, Nebraska, died July 6th. He is survived by a widow, two sisters and a brother.

Dr. J. G. Parsons, a practicing dentist in San Diego, California, died July 27th. He was 54 years old and is survived by a widow.

Dr. William Dentz, a former dentist in Erie, Pennsylvania, died July 23d at Weiser, Massachusetts. Death was due to a nervous breakdown.

Dr. Charles Larison, a prominent dentist of Yreka, California, died suddenly July 9th. He was 52 years of age and is survived by a wife, two daughters and one son.

Dr. Joseph Gates, one of the oldest dentists in western New York, died July 9th following an operation. The doctor was 82 years of age and is survived by a widow.

Dr. J. Robbins, the oldest practicing dentist in Salem, Mass., died July 27th from a stroke of apoplexy. For eighteen years he was dental surgeon at the Salem Hospital. He is survived by a wife and one son.

Dr. Gustavus R. Brown, suffering from a nervous breakdown and business reverses and fearing he would lose his mind, fired a bullet into his head July 25th and died a few minutes later. The doctor was 57 years of age.

Dr. Samuel J. Shaw, a prominent dentist of Springfield, Massachusetts, died July 25th of congestion of the brain. He patented a number of dental devices and for his work in that direction was made honorary member of the Massachusetts Dental Association. He is survived by a widow and one daughter.

Wanted**For Sale****Exchange**

NOTE:—Advertisements in this Department not exceeding fifty words will be published Free for three insertions for subscribers whose subscriptions have been paid for one year in advance.

Advertisements under regular heading from non-subscribers will be inserted for a charge of five cents per word. Remittance in full must accompany such copy.

Copy must be on file in our office by the 15th of the preceding month in which insertion is desired.

In answering these advertisements through the American Dental Journal, enclose your answer in stamped envelope with the advertiser's letters marked on the corner. No unstamped letters will be forwarded.

We are not responsible for any advertisement appearing in these columns.

PUBLISHERS.

FOR SALE—Eight-room house beautifully located, \$1,800, also heavy office furniture, almost new, \$400 or \$500. Three rooms in new brick, rent \$10.00, population 800. Rich farming community. No competition, prices equal to your nerve. This is a good opportunity for a recent graduate who has not got outfit or location. Address, Dr. F. U. Emley, Belle Plaine, Kans.

FOR SALE—Elgin Casting Appliance, in good condition with gold traps under arms. Price \$15.00 complete. Address "Cast," care American Dental Journal, 39 State street, Chicago, Ill.

FOR SALE—Four-room dental office and four-room cottage in an up-to-date southern town. Practice established eleven years. Good reason for leaving. Buyer must have cash. Address "W," care Dutro & Hewitt, Memphis, Tenn.

FOR SALE—An attractive practice and outfit in good South Dakota town. Change of business and climate desired. Address "C. H.," care S. S. White Dental Mfg. Co., Chicago, Ill.

WANTED—Dental practices. My method of finding buyers is successful. No publicity for you. Write for information. Unlocated dentists write for bargain sale lists. Mention states desired. The Dentists' Middleman, C. M. Cryor, D. D. S., Box M., Franklin Grove, Ill.

FOR SALE—A good dental practice and equipment excepting working instruments, reasonable rent, long lease if desired, handsome rooms, good light on ground floor, in an agricultural town, Central-Western Illinois, established 15 years; \$100.00 buys everything, including unfinished work, if taken quick. Address, T. K. G., care American Dental Journal.

Acute Inflammation

A patient applies for treatment with a jaw so swollen and painful that it is impossible to open the mouth sufficiently to make a proper examination, much less do any operating.

We are constantly receiving reports from dentists who have treated such cases with a thick hot dressing of Antiphlogistine, to find that in twenty-four to forty-eight hours the swelling and pain have so far disappeared as to allow of proper operative procedures.

But—"A stitch in time saves nine." Antiphlogistine used when the inflammation is beginning will prevent the serious condition pictured above.

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